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Childhood Lead Poisoning in Wisconsin

Elimination by 2010

Margie Coons
Environmental Health/Look Out for Lead
2004 Conference

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CDC required all grantees develop a plan to eliminate childhood lead poisoning by 2010

- Draft plan submitted with grant reapplication in March 2004
- Funding decisions for this year were weighted heavily on the completeness of the draft plan
- Final plan was submitted July 30, 2004

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To set the stage...

- How lead affects children
- Lead problem in Wisconsin
- Risk factors for lead poisoning
- Costs of lead poisoning
- Strategies for the future (Elimination Plan)

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Health effects of lead on young children:

- Highly toxic
- Affects virtually every system in the body
- Can affect a child's ability to think, concentrate and learn

Lead exposure is linked to:

- Reduced IQ
- Reading & Learning Disabilities
- Behavior Problems
- Hearing Problems; Reduced Height
- Kidney Disease; Anemia
- Seizures, Coma, Death
- Juvenile Delinquency & Crime

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Health effects of lead on young children:

- Lead poisoning defined as a blood lead level (BLL) of 10 micrograms per deciliter or more
- Current research indicates no safe level
- BLLs of less than 10mcg/dL are associated with lower IQ and reading scores

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How children get exposed to lead:

- Exposure through direct ingestion of paint chips or indirect ingestion of lead-contaminated house dust or soil
- Through normal hand-to-mouth activity

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Young children are at greatest risk:

- Hand-to-mouth behavior
- Higher rate of absorption of lead
- Rapidly developing nervous system is vulnerable to the effects of lead

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Extent of the lead poisoning problem in Wisconsin

- Mandatory reporting law assures complete data on children who are tested
- Laboratories report all blood lead test results to the Department of Health and Family Services

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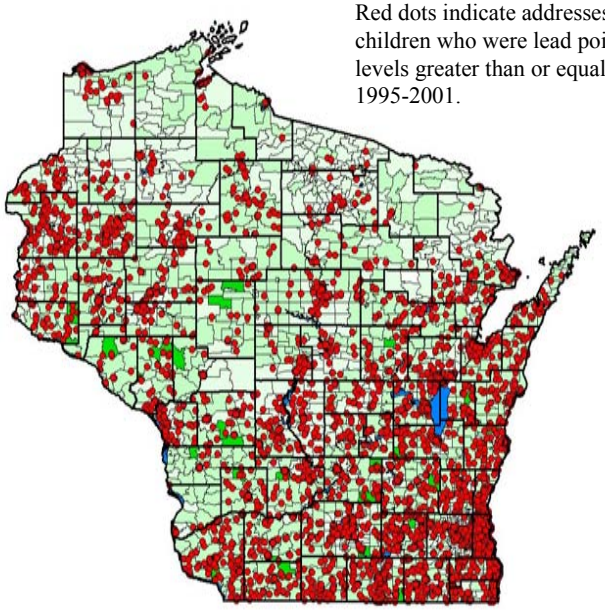
Extent of the lead poisoning problem in Wisconsin

The rate of lead poisoning among Wisconsin children is nearly 3 times the national average:

- Wisconsin (2002) **6.1%**
- National (NHANES 1999-2000) **2.2%**

Percent of children (1-5 yrs.) tested who had a blood lead level of 10 mcg/dL or more



Red dots indicate addresses associated with children who were lead poisoned (blood lead levels greater than or equal to 10 mcg/dL), 1995-2001.

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Wisconsin's Highest Risk Communities*

Milwaukee (city)	Marathon Co.
Sheboygan Co.	Brown Co.
Beloit	Fond du Lac Co.
Racine (city)	Rock Co.
Oshkosh	La Crosse Co.
Kenosha Co.	Waukesha Co.
Manitowoc Co.	

*These communities account for 82% of lead poisoned children in WI.

Extent of the lead poisoning problem in Wisconsin

- Risk factors
  - •Family Income
  - •Race/ethnicity
  - •Age of child
  - • Age of house

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Extent of the lead poisoning problem in Wisconsin

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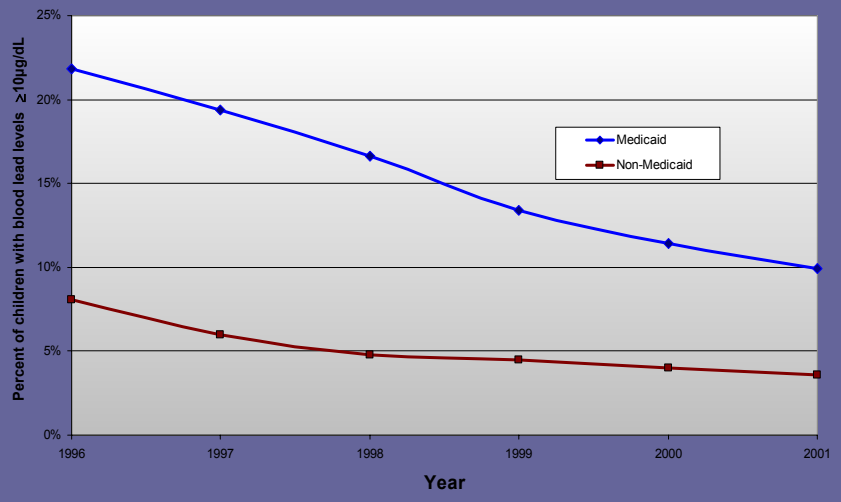
Prevalence of Lead Poisoning in Wisconsin Among Children Ages 0 to 5 Years, 1996 - 2001



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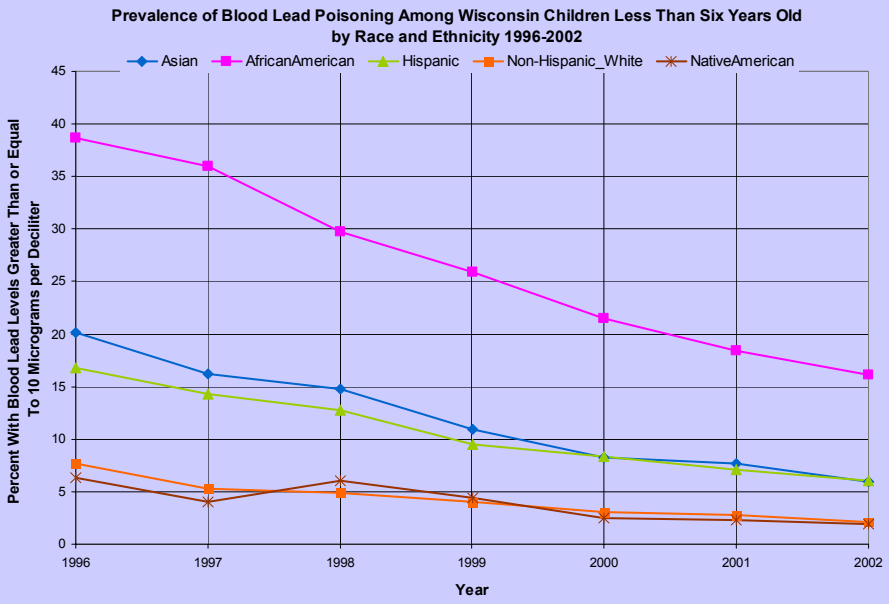

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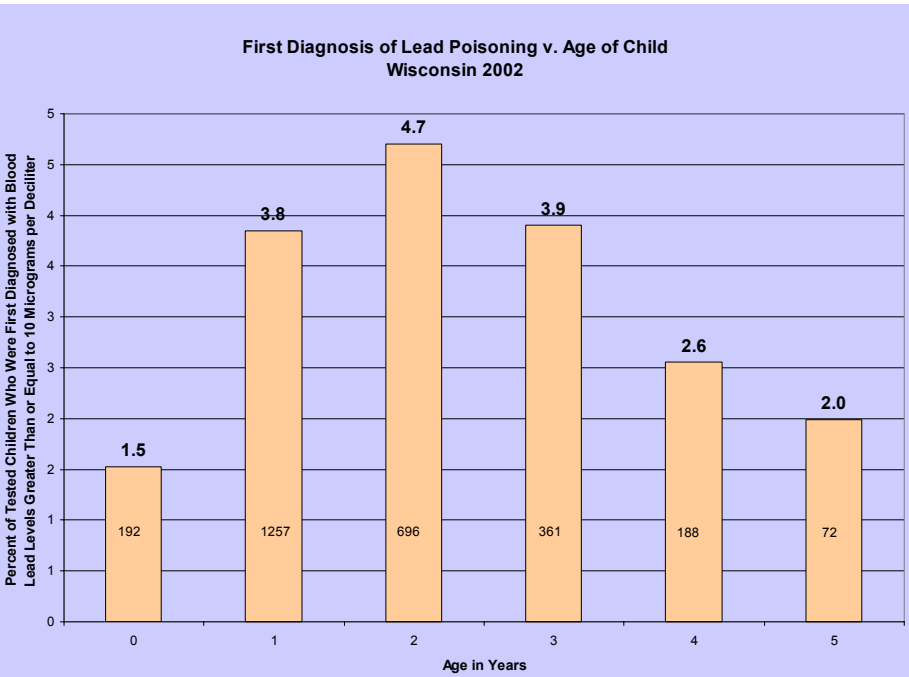

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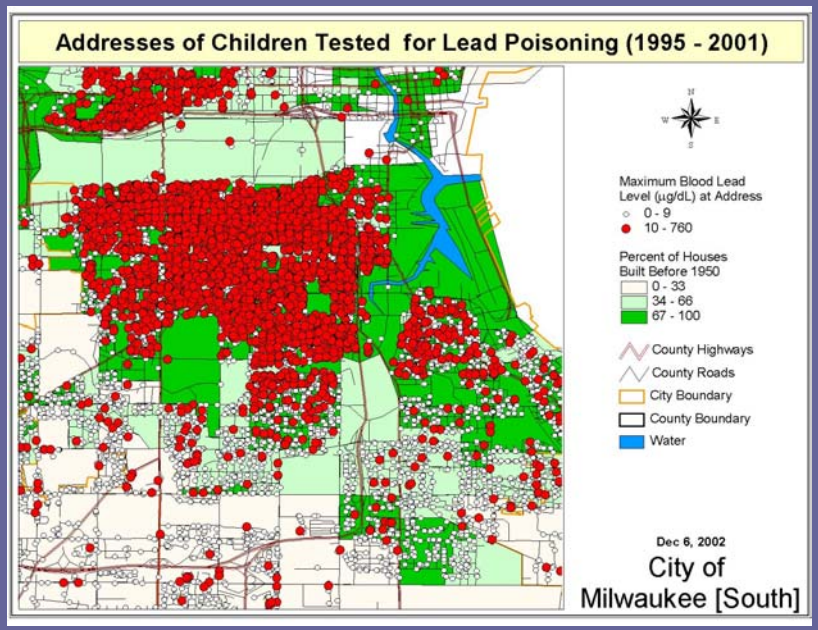
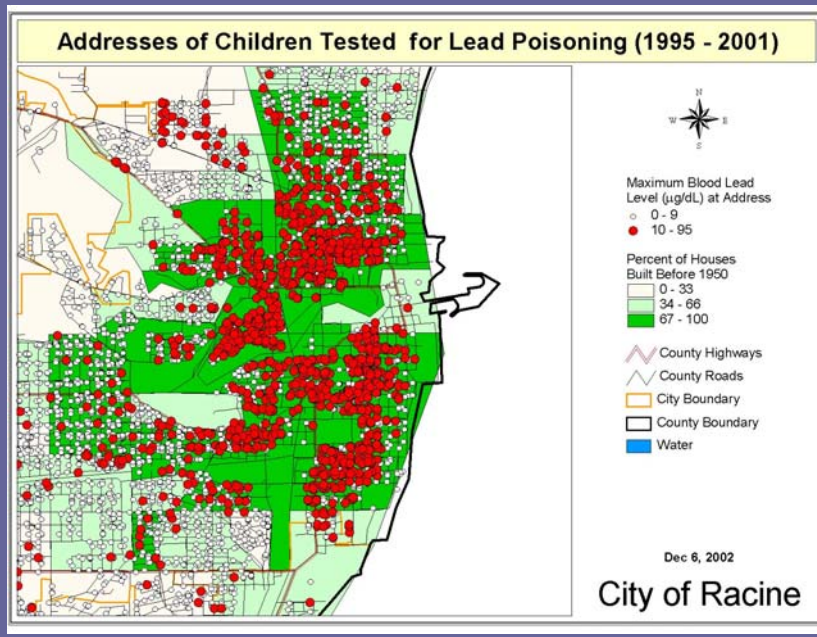
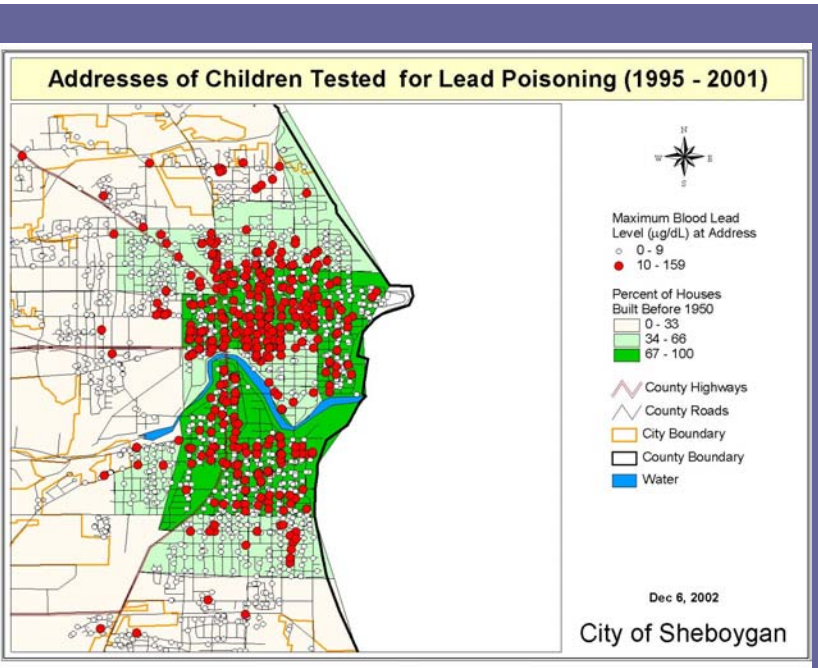
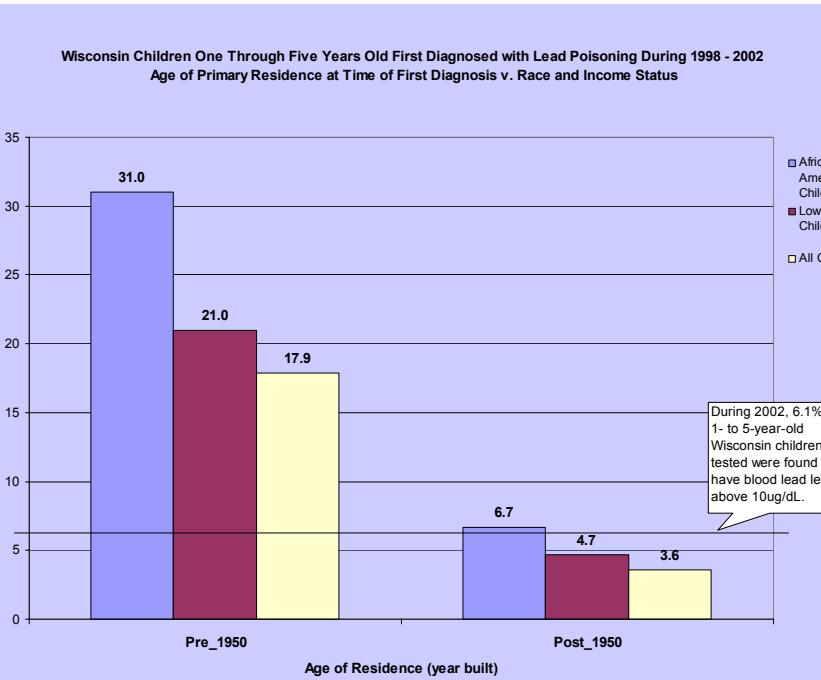

Addresses of Children Tested for Lead Poisoning (1995 - 2001)
Maximum Blood Lead Level (µg/dL) at Address
0 - 9
10 - 760
Percent of Houses Built Before 1950
0 - 33
34 - 66
67 - 100
County Highways
County Roads
City Boundary
County Boundary
Water
Dec 6, 2002
City of Milwaukee [South]


Addresses of Children Tested for Lead Poisoning (1995 - 2001)
Maximum Blood Lead Level (µg/dL) at Address
0 - 9
10 - 95
Percent of Houses Built Before 1950
0 - 33
34 - 66
67 - 100
County Highways
County Roads
City Boundary
County Boundary
Water
Dec 6, 2002
City of Racine


Addresses of Children Tested for Lead Poisoning (1995 - 2001)
Maximum Blood Lead Level (µg/dL) at Address
0 - 9
10 - 159
Percent of Houses Built Before 1950
0 - 33
34 - 66
67 - 100
County Highways
County Roads
City Boundary
County Boundary
Water
Dec 6, 2002
City of Sheboygan


Wisconsin Children One Through Five Years Old First Diagnosed with Lead Poisoning During 1998 - 2002
Age of Primary Residence at Time of First Diagnosis v. Race and Income Status
Percent of Children With Blood Lead Levels Greater Than or Equal to 10 Micrograms per Deciliter
35
30
25
20
15
10
5
0
31.0
21.0
17.9
6.7
4.7
3.6
Pre_1950
Post_1950
Age of Residence (year built)
African-American Children
Low-Income Children
All Children
During 2002, 6.1% of all 1- to 5-year-old Wisconsin children tested were found to have blood lead levels above 10ug/dL.

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Extent of the lead poisoning problem

- 90% of lead poisoned children in WI live in housing built before 1950
- Estimate 120,000 dwellings in WI with lead hazards present and occupied by children under 6 years old
- 20,000 units need to be made lead-safe per year
- Current production: 3,800 per year.

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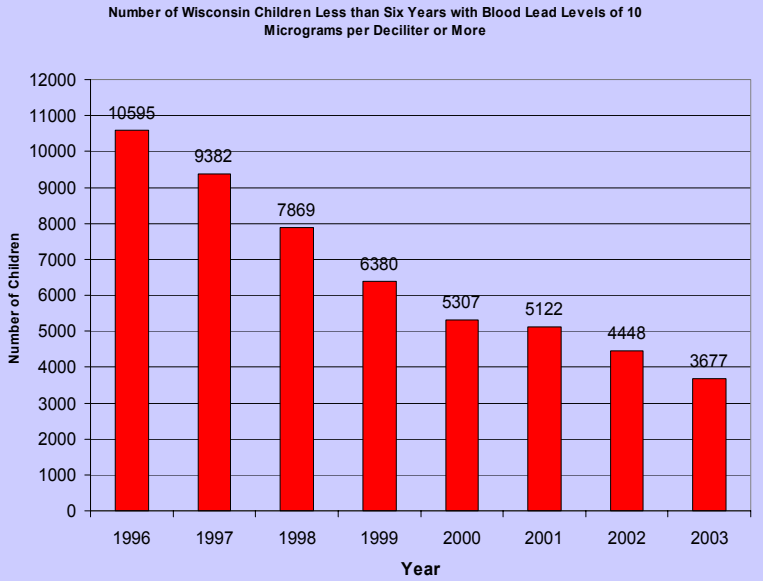
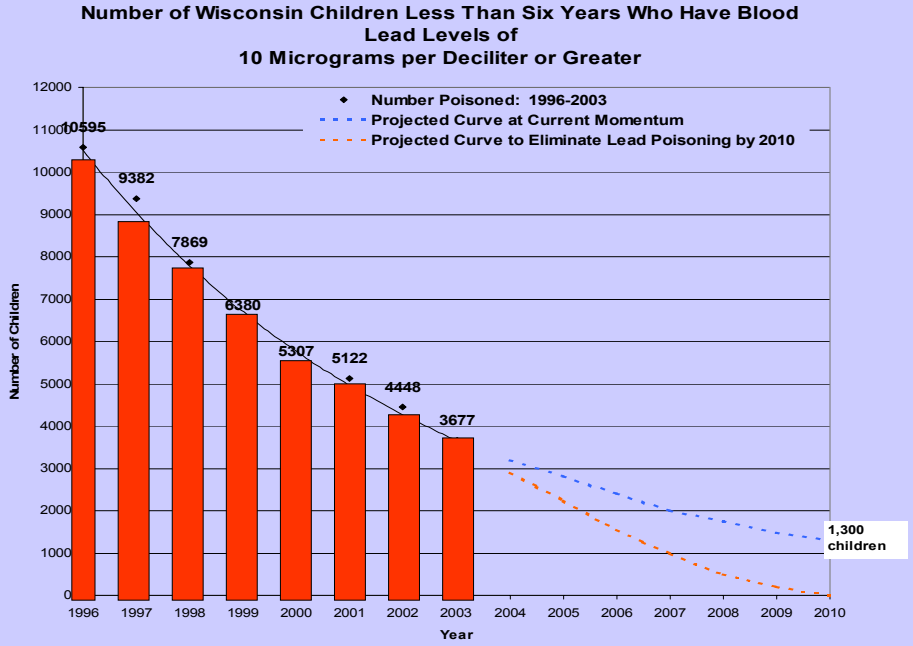
Progress in Wisconsin

- The number and rate of children identified with lead poisoning in WI has been steadily declining since 1996.





"As long as attention focuses on the costs of lead-paint abatement and ignores the costs of not abating and as long as people add up the costs of removing paint but not the costs of medical care, compensatory education, and school dropouts, substantial action is unlikely." - Joel Schwartz (1994, *Societal Benefits of Reducing Lead Exposure*, Environmental Research)

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Annual Costs of Lead Poisoning

How much can Wisconsin save by eliminating lead poisoning?

• Factor 1 - Special education	=	$ 1,336,965
• Factor 2 - Medical costs	=	$ 424,550
• Factor 3 - Juvenile justice	=	$ 3,941,233
• Factor 4 - Lost future income	=	$ 8,334,511
Total	=	$14,037,259

Model developed by Katrina Smith Korfmacher, PhD

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Initial Considerations

- Are we testing the right children at the right time?
- Is the current model of intervening after a child is diagnosed with lead poisoning adequate?

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Targeting High Risk Populations

Are we testing the right children at the right time?

- The rate of blood lead testing among children enrolled in Medicaid has steadily increased since 1996
- Less than half of the children on Medicaid are tested at age one and two

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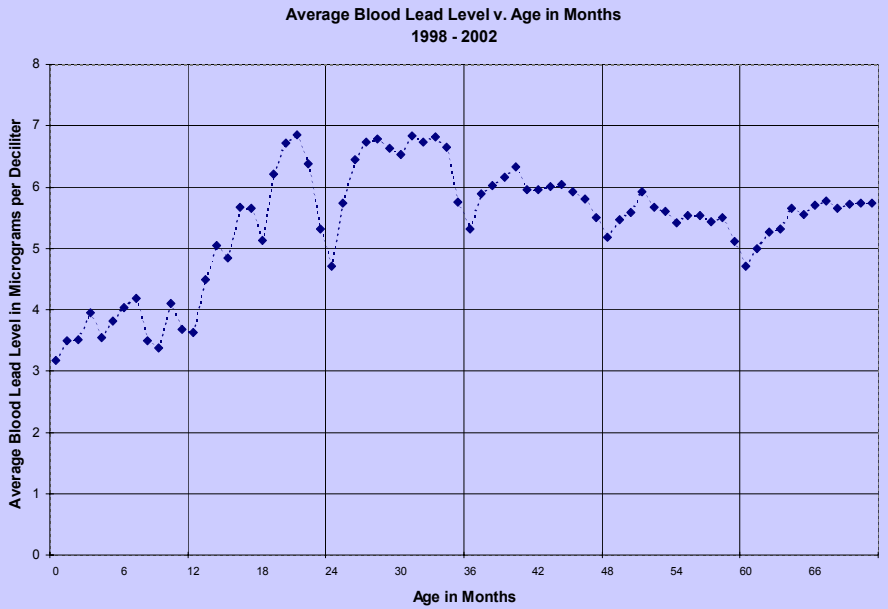
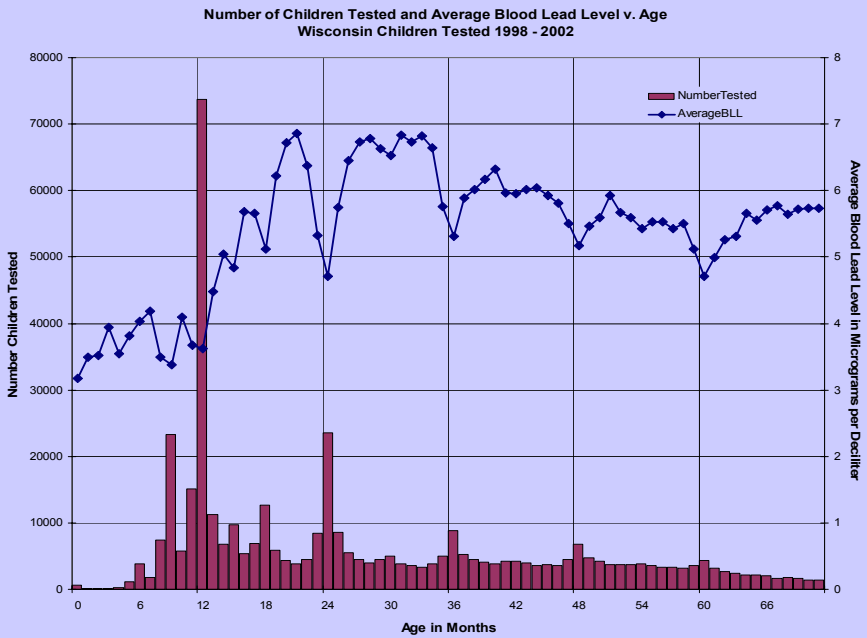
Targeting High Risk Populations

Are we testing the right children at the right time?

- Blood lead levels are highest between the ages of 18-36 months of age.
- Many WI children are only tested around their first birthday





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Limitations of current model: "Too little"

- In 2003 there were 684 children w EBLL. (venous blood $\geq$ 20 or repeat 15-19) State law requires property investigation at this level.
- There were 3,677 children with blood lead levels of 10 micrograms per deciliter. Current available resources are insufficient to evaluate lead hazards in all these dwellings.

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Limitations of current model: "Too late"

- Majority of EBL children are age 2 or 3.
- Children's educational performance is best predicted by blood lead levels at age two.
- For housing interventions to be effective, ideally they should be done before birth or at least before children begin to crawl.

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Limitations of current model: "Too slow"

- Although health departments respond quickly to EBL cases, for children with blood lead between 20 and 40, it takes, on average, 4 years for a child's blood lead to drop below 10 micrograms/deciliter.
- Improvement rate depends on how long a child has been exposed and on the speed at which owners act to correct hazards.

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How long did it take property owners to correct hazards for "EBL" cases where lead hazards were found in 2001?

- 50% of Milwaukee owners finish in 70 days
- 50% of Racine owners finish in 210 days
- 50% of owners in rest of state finish in 260 days

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Challenges

- How do we increase testing of our highest risk children, e.g., those on Medicaid?
- How can we expand and strengthen interventions to families of lead poisoned children?
- How can we identify and control lead hazards in high-risk housing?
- How can we obtain the resources necessary to eliminate lead poisoning in Wisconsin?

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Elimination Planning Committee

- 32 members invited to participate
- Chair - Kenneth Munson; DHFS Deputy Secretary
- Facilitator - Kris Freundlich; DHFS Office of Strategic Finance
- WCLPPP staffed the committee

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Elimination Planning Committee

- Representatives from state and local public health and housing agencies, physicians, parents, child advocates, legislators, Medicaid Program, Dept. of Justice, Commissioner of Insurance, 16th St. CHC, WI Realtors Assoc., landlord association, HUD, EPA

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Elimination Planning Committee

- First committee meeting January 2004
- Monthly meetings through June 2004
- Group process to develop and rank strategies for inclusion in the plan
- 4 workgroups developed 5-year goals with objectives, activities & performance measures; identified responsible persons/agencies

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Elimination Plan - 4 focus areas

- Education - general public and various target audiences
- Identify and control lead hazards in high-risk housing
- Target high-risk children for blood lead testing
- Funding and Resources

Education

- Home-based strategies to educate parents and caregivers - *Governor's KidsFirst Agenda*
- General public
- Policy makers and legislators
- Property owners and construction trades contractors

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Correcting Lead Hazards in Housing

- Identify risk factors in housing, in addition to building age, associated with lead poisoning
- Evaluate and control lead hazards in all pre-1950 housing
- Strengthen enforcement of lead hazard reduction
- Increase incentives for property owners to control lead hazards

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Targeting High Risk Populations

- Establish new policies to improve age-appropriate blood lead testing
- Determine physicians screening practices and identify barriers to screening
- Educate physicians on the need for lead screening
- Enhance data sharing between critical partners regarding blood lead testing of children

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Developing Sufficient Resources

- Increase the proportion of available HUD funding that local communities devote to lead hazard control (e.g. CDBG, HOME)
- Increase the total amount of funding available in WI for lead poisoning prevention through traditional and new sources.

Next Steps

- Lead Poisoning Elimination Plan Implementation and Oversight Committee
- 4 implementation subcommittees reflecting the 4 focus areas of the Elimination Plan

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Good News!

- Based on their review of our draft plan, CDC increased WCLPPP funding by an additional $112,000 for this year to implement Year 1 activities.
- US HUD - Additional $10.4 million to WI during 2005 - 2007
- Blue Cross/Blue Shield Planning Grant - Racine